JSEP Interim

6/18/2015

Changes since -09

- Clarify bundle policy behavior
- Specify the number of CNAMEs
- Specify rtcp-mux:require behavior for answerer
- Specify LS behavior (*)
- Specify a=imageattr behavior (*)
- Provide guidance on session-level b= (*)
- Don't use the c= line (*)

LS Behavior

- RFC5888 says that lip-sync groups are negotiated: offerer specifies a group with mids to sync, and answerer can take a subset
  - But answerer may want sync even if offerer doesn't
- **Option 1:** Remove this constraint and make a=group:LS declarative
- **Option 2:** Keep existing semantics; answerer can change by not reusing m= lines
- Proposed resolution: **Option 1**

Imageattr specification (receiver)

- SDP should contain intersection of
  - Hard constraints from decoder
  - Mandatory constraints applied to recv track
- Answerer can send both in initial answer
- Offerer can mostly send hard constraints
  - Recv track isn't available at offer time
  - Renegotation needed if constraints applied later

Imageattr interpretation (sender)

- If original resolution meets criteria, sender MUST send it unmodified
- If it's too large, you SHOULD downscale
- If it's too small, do you upscale? Open Issue later
- If you can't meet the constraints, you MUST NOT send

b= at session level

- Clarified that b= is valid at session level, at a minimum for b=CT:<foo>
- More on b= later

Don't use c= line

- RFC 5245 strongly implies you check c= line against candidates
  - If there's no match send ice-mismatch
  - This detects bogus middleboxes
- This doesn't make sense here
  - JSEP always does ICE
  - Worst that can happen is that ICE fails
  - And that's what happens if you ignore c=
- Resolution: check c= line but don't use it

Open Issues

#9: changing "b="

- Question: do JSEP implementations need to
  - set b=RS/RR?
  - honor b=RS/RR?
- Unclear whether there are cases where we need something other than the ~5% rule
- BWE may not work properly with artificially low RS value
- Proposed resolution: **don't set, don't use**

#144: Use of b= at session level

Recap/proposal post-IETF 92:

- AS at media level is the max bitrate for a m-line
- AS at session level not well-defined, MUST NOT
- CT at session level is the max bitrate for session; browser has discretion on how it is used
  - Can be combined with media-level AS
- CT at media level not well-defined, MUST NOT

#122: b=TIAS usage

Recap/proposal post-IETF 92:

- TIAS used like AS at media level
- JSEP impls MUST generate TIAS
- JSEP impls MUST process TIAS
  - prefer TIAS over AS if present
  - convert AS to approximate TIAS if not
- Like AS, TIAS not allowed at session level

Magnus comments on a=ssrc (#148/149)

- JSEP says SSRCs must be signaled using a=ssrc
- However, when switching codecs with different clockrates, need to use a new SSRC (e.g. Opus -> PCMU)
- **Option 1:** Ignore, use same SSRC
- **Option 2:** Don't use a=ssrc, allow new SSRC to be used (requires MID header)
- **Option 3:** O-A to signal new a=ssrc
- Proposed resolution: **Option 1 (least work required)**

Magnus question on a=imageattr

- How is rotation handled? i.e. if one specifies a=imageattr:* recv [x=1280, y=720], what happens if the sender rotates to produce 720x1280?
- When CVO is used, the sent video is always unrotated, and JSEP impls that support rotation MUST use CVO
- Proposed resolution: **a=imageattr always refers to the "landscape" resolution**

#16: Accessors

- Presently no way to access previous stable description in re-offer cases. Currently .localDesc is last set.
- **Option 1:** have .pendingLD (proposed), .stableLD (current) and leave .localDesc as legacy (maps to pending/stable depending on state)
- **Option 2:** add .stableLD and leave .localLD as last-set
- Proposed resolution: **add .pendingLD and .stableLD**

#125 (1): SDP mangling + bundle

- What happens if app modifies bundle attributes between create{Offer,Answer} and setLocalDescription?
- Proposed resolution:
  - Legal to unbundle
  - Legal to remove bundle-only
  - Not legal to bundle things that were not bundled

    (because there may be internal constraints forbidding it, such as QoS).

#125 (2): SDP mangling + rtcp-mux

- What happens if app modifies a=rtcpmux between create{Offer,Answer} and setLocalDescription?
- Proposed resolution:
  - Require policy: not legal to remove (contradicts policy)
  - Negotiate policy: legal to remove (this is compatible)

#143: Is CreateOffer allowed in remote-pranswer

- This is not allowed in RFC 3264
  - But we generally allow you to do createOffer at other times that 3264 wouldn't allow.
- Proposed resolution:
  - don't allow as it would break rollback
  - First need to rollback to previous stable state canceling offer

Upscale media

If the receiver says it requires video that has a size of at least X, should the sender upscale ?